

Claim 1 is the only independent claim. It recites a phosphocalcic compound, characterized in that it has the following chemical composition:  $\text{Ca}_{(10-a)} (\text{Mg}, \text{K}, \text{Na})_b (\text{PO}_4)_{6-c} (\text{HPO}_4, \text{CO}_3)_d (\text{OH})_{2-e} (\text{F}, \text{Cl}, \text{CO}_3)_f [(\text{OA})(\text{OE})\text{P}(\text{O})-\text{CR}^1\text{R}^2-\text{P}(\text{O})(\text{OA})(\text{OE})]_g$ , in which  $0 < a < 9$ ;  $0 < b < 2$ ;  $0 < c < 5$ ;  $0 < d < 2$ ;  $0 < e < 2$ ;  $0 < f < 2$ ;  $g < 0.5$ , A and E represent H, an alkali metal, an alkaline-earth metal or nothing,  $\text{R}^1$  represents H, OH or a halogen and  $\text{R}^2$  represents an element chosen from a hydrogen, a halogen, an alkyl radical, an aminoalkyl radical in which the amino group optionally bears an alkyl substituent, an alkylamino radical, an alkyl radical bearing an aromatic substituent comprising at least one N atom, and an alkyl radical bearing an aromatic thioether group.

Applicants have a right to have multiple inventions examined in a single application when they are linked as to form a single general inventive concept. A group of inventions is considered linked to form a single general inventive concept where there is a technical relationship among the inventions that involves at least one common or corresponding special technical feature. M.P.E.P. §1893.03(d). In Markush practice, the requirement of at least one common or corresponding special technical feature shall be considered to be met when the alternatives are of a similar nature. Chemical compounds in a Markush-type claim shall be regarded as being of a similar nature where the following criteria are fulfilled:

(A) All alternatives have a common property or activity; and

(B)(1) A common structure is present, i.e., a significant structural element is shared by all of the alternatives; or

(B)(2) In cases where the common structure cannot be the unifying criteria, all alternatives belong to a recognized class of chemical compounds in the art to which the invention pertains. M.P.E.P. §1850(III)(B).

The Examiner alleges that the compounds defined in the claims lack a significant structural element qualifying as the special technical feature that defines a contribution over the prior art, namely U.S. Patent 5,208,234 ("Poss"). Office Action at pages 4-5. Apparently, the Examiner alleges that the compounds of claim 1 do not possess (B)(1) or (B)(2) as set forth above.

Applicants provisionally elect, *with traverse*, to prosecute the invention of Group II as identified above. As Applicants have elected Group II, Applicants further provisionally elect the species alendronate ( $\text{R}_1 = \text{OH}$ ,  $\text{R}_2 = (\text{CH}_2)_3\text{-NH}_2$ ) for further

prosecution. Applicants note that such species election is for search purposes only, and if upon search and examination such species is determined to be patentable, the non-elected species are subject to rejoinder.

Applicants respectfully traverse the requirement of election between Groups I and II as set forth in the Office Action.

Applicants respectfully submit that all of the compounds of claim 1 have both a common property and common activity. Specifically, the common activity of the compounds of claim 1 is their inhibition of osteoclast activity without undesirable side effects. Page 2, lines 24-33. The common property of the compounds of claim 1 is their ability to carry the active principle, while providing a source of calcium and phosphate for bone remodeling. Page 7, lines 6-12.

Applicants further respectfully submit that all of the compounds of claim 1 share a significant structural element. M.P.E.P. §1850(III)(B) states the words "significant structural element is shared by all of the alternatives" refer to cases where the compounds share a common chemical structure which occupies a large portion of their structures, or in the case the compounds have in common only a small portion of their structures, the commonly shared structure constitutes a structurally distinctive portion in view of existing prior art, and the common structure is essential to the common property or activity.

First, Applicants assert that the compounds of claim 1 share a common structure which occupies a large portion of their structures. This common structure is a phosphocalcic compound modified with a gem-biphosphonic acid:  $\text{Ca}_{(10-a)} (\text{Mg}, \text{K}, \text{Na})_b (\text{PO}_4)_{6-c} (\text{HPO}_4, \text{CO}_3)_d (\text{OH})_{2-e} (\text{F}, \text{Cl}, \text{CO}_3)_f [(\text{OA})(\text{OE})\text{P}(\text{O})-\text{CR}^1\text{R}^2-\text{P}(\text{O})(\text{OA})(\text{OE})]_g$ , with the exception of the  $\text{R}^2$  group of the gem-biphosphonic acid.

Second, Applicants assert that such common structure constitutes a structurally distinctive portion in view of existing prior art and is essential to the compounds' aforementioned common activity and property. Again, the common activity and property are inhibiting the activity of osteoclasts without undesirable side effects and carrying the active principle, while providing a source of calcium and phosphate for bone remodeling, respectively.

Poss actually demonstrates that the common structure constitutes a structurally distinctive portion over the prior art. Poss discloses substituted imidazoles of the general formula set forth at col. 1, line 15-col. 2, line 52. Poss' substituted imidazoles

are phosphonic and phosphinic acid derivatives. However, such compounds do not include calcium and are not phosphocalcic compounds. In contrast, the compounds of claim 1 include calcium and are phosphocalcic compounds. Moreover, Poss' compounds do not include gem-biphosphonic acids, which have two phosphonic acid groups linked to the same carbon atom. In contrast, the compounds of claim 1 include gem-biphosphonic acids.

The specification describes how the common structure of the compounds of claim 1 is essential to their common property and activity. Gem-biphosphonic acids have an inhibitory power on osteoclast activity. Page 1, lines 17-19. However, administration of gem-biphosphonic acids causes undesirable side effects and only results low levels of absorption of the active principle onto bone material. Page 1, line 27-page 2, line 4. The claimed phosphocalcic compounds modified by gem-biphosphonic acid are advantageous over gem-biphosphonic acids because they inhibit osteoclast activity, but reduce and/or eliminate the side effects associated with the use of gem-biphosphonic acids. Page 2, lines 24-29. This advantage can be realized because the gem-biphosphonic acid is present and the phosphocalcic compound acts as a vector for the active principle. The claimed phosphocalcic compounds are further advantageous over gem-biphosphonic acids because they constitute a source of calcium and phosphate required for stimulation of bone remodeling. Page 7, lines 1-19. These advantages (i.e. common property and activity) are not dependent upon the definition of the  $R^2$  group. In other words, these advantages are not dependent upon the particular gem-biphosphonic acid. Rather, these advantages are dependent upon the overall structure.

In sum, Applicants respectfully submit that the compounds of claim 1 meet requirements (A) and (B)(1) and/or (B)(2) set forth in M.P.E.P. §1850(III)(B) and exhibit unity of invention. Accordingly, Applicants respectfully request the Examiner withdraw the election requirement based upon unity of invention.

In further support of the election requirement, the Examiner states that the "vastness of the claimed subject matter, and the complications in understanding the claimed subject matter impose a burden on any examination of the claimed subject matter." Office Action at page 5.

Applicants submit that any burden placed upon the Examiner to search accordingly to determine the art relevant to Applicants' overall invention is

significantly outweighed by the public's interest in not having to obtain and study separate patents in order to have available all of the issued patent claims covering Applicants' invention. It is also in the interest of economy, for the Office, for the public-at-large, and for Applicants, that the compounds of claim 1 be searched and examined in one application.

For at least the above reasons, reconsideration and withdrawal of the election requirement are requested.

Applicants have no intention of abandoning any non-elected subject matter, and should it be necessary, Applicants expressly reserve the right to file one or more continuation and/or divisional applications directed to non-elected subject matter.

Applicants earnestly solicit favorable consideration of the above response and early passage to issue the present application. The Examiner is invited to contact the undersigned at the below-listed telephone number, if it is believed that prosecution of this application may be assisted thereby.

Respectfully submitted,

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